

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An image sensor comprising:
 - a plurality of photoelectric converter elements each of which converts an optical signal into an electric signal;
 - a plurality of channel selector switches which correspond to said photoelectric converter elements and which are selectively turned on and off to selectively connect and disconnect output portions of the corresponding photoelectric converter elements to and from a common signal line, in synchronization with a clock pulse signal;
 - a first input terminal through which a resolution setting timing signal is received from an external device outside of the image sensor;
 - a second input terminal through which a ~~second~~first resolution setting signal is received from said external device; and
 - a third input terminal through which a second resolution setting signal is received from said external device, the third input terminal receiving the clock pulse signal as said second resolution setting signal; and
 - a resolution setting portion that receives said resolution setting timing signal, said first resolution setting signal and said second resolution setting signal, and selects one of a plurality of on-off control patterns of said plurality of channel selector switches, ~~on the basis of~~based on a combination of on-off states of the first resolution setting signal and on-off states of the second resolution setting signal~~signals~~ upon at least one of rising and falling of said resolution setting timing signal, said plurality of channel selector switches being selectively turned on and off in the selected on-off control pattern, to set an image resolution value of the image sensor.

2. (Currently Amended) The image sensor according to claim 1, further comprising a shift register circuit that selectively turns on and off said plurality of channel selector switches in the on-off control pattern selected by said resolution setting portion, and wherein said resolution setting timing signal and said first ~~and second~~ resolution setting ~~signals are~~ signal is selected from a group consisting of a control signal for setting said image resolution ~~value, value and~~ value, value and a start signal for starting said shift register ~~circuit, and said clock pulse signal circuit.~~

3. (Original) The image sensor according to claim 2, wherein said resolution setting timing signal is one of said control signal and said clock pulse signal, and said resolution setting portion prevents said start signal from starting said shift register circuit for a predetermined length of time after a moment of said the rising or falling of said resolution setting timing signal.

4. (Previously Presented) The image sensor according to claim 2, wherein said shift register circuit simultaneously turns on a plurality of adjacent switches of said plurality of channel selector switches, when said image resolution value set by said resolution setting portion is other than a highest one of a plurality of image resolution values available by an operation of said resolution setting portion, the number of said adjacent switches varying depending upon the image resolution value set by said resolution setting portion.

5. (Previously Presented) The image sensor according to claim 1, wherein said resolution setting portion is operated to set said image resolution value before each line of image is read by operation of said plurality of photoelectric converter elements and said plurality of channel selector switches.

6. (Previously Presented) The image sensor according to claim 1, wherein

said resolution setting portion is operated to set said image resolution value before each page of image is read by operation of said plurality of photoelectric converter elements and said plurality of channel selector switches.

7. (Canceled)

8. (Original) The image sensor according to claim 1, wherein the number of said plurality of on-off control patterns of said plurality of channel selector switches is equal to a multiple of four, and said plurality of on-off control patterns correspond to respective different values of the image resolution of the image sensor.

9. (Previously Presented) The image sensor according to claim 1,
wherein said resolution setting portion receives from said external device said first resolution setting signal and said second resolution setting signal through said second and third input terminals, respectively, before each page of image is read with said plurality of channel selector switches being selectively turned on to connect said output portions of the corresponding photoelectric converter elements to said common signal line.

10. (Currently Amended) The image sensor according to ~~claim 1~~, claim 2, said resolution setting portion including one of (a) a first portion for changing a moment at which the on-off states of the first and second resolution setting signals respectively received through said second and third input terminals from said external device are detected to select one of the plurality of on-off control patterns of the plurality of channel selector switches, and (b) a second portion for changing the on-off states of the first and second resolution setting signals at a predetermined moment of detection of the on-off states of the first and second resolution setting signals,

wherein said shift register circuit simultaneously turns on a plurality of adjacent switches of said plurality of channel selector switches, when said image resolution value set by said resolution setting portion is other than a highest one of a plurality of image

resolution values available by an operation of said resolution setting portion, the number of said adjacent switches varying depending upon the image resolution value set by said resolution setting portion.

11. (Previously Presented) The image sensor according to claim 10, wherein said shift register circuit turns on successive groups of the channel selector switches each group consisting of said plurality of adjacent switches, in synchronization with respective successive pulses of said clock pulse signal, when the image resolution value set by said resolution setting portion is other than the highest value.

12. (Previously Presented) An image reading device comprising:

- an image sensor as defined in claim 1;
- a resolution-setting-timing-signal generating portion that generates said resolution setting timing signal which is received by said resolution setting portion from said external device through said first input terminal;
- a first resolution-setting-signal generating portion that generates said first resolution setting signal which is received by said resolution setting portion from said external device through said second input terminal;
- a second resolution-setting-signal generating portion that generates said second resolution setting signal which is received by said resolution setting portion from said external device through said third input terminal; and
- a control portion that controls said resolution-setting-timing-signal generating portion and said first and second resolution-setting-signal generating portions.

13. (Previously Presented) The image reading device according to claim 12, wherein said image sensor further comprises a shift register circuit that selectively turns on and off said plurality of channel selector switches in the on-off control pattern selected by said resolution setting portion, and wherein said resolution setting timing signal and said first

and second resolution setting signals which are respectively generated by said resolution-setting-timing-signal generating portion and said first and second resolution-setting-signal generating portions are selected from a group consisting of a control signal for setting said image resolution value, a start signal for starting said shift register circuit, and said clock pulse signal.

14. (Original) The image reading device according to claim 13, wherein said resolution-setting-timing-signal generating portion and said first and second resolution-setting-signal generating portions generate said control signal, said start signal and said clock pulse signal, respectively, and said control portion controls the on-off states of said start signal and said clock pulse signal upon at least one of rising and falling of said control signal.

15. (Original) The image reading device according to claim 13, wherein said resolution setting timing signal is one of said control signal and said clock pulse signal, and said shift register circuit is not started by said start signal for a predetermined length of time after a moment of said the rising or falling of said resolution setting timing signal.

16. (Currently Amended) The image reading device according to claim 13, wherein said resolution-setting-timing-signal generating portion generates one of said control signal and said clock pulse signal, as said resolution setting timing signal, and said control portion controls one of ~~said resolution setting timing signal generating portion and said first and second resolution-setting-signal generating portions~~ to generate said start signal ~~again~~, to start said shift register circuit, after said image resolution value is set by said resolution setting portion.

17. (Original) The image reading device according to claim 12, wherein said resolution setting portion is operated to set said image resolution value before each line of image is read by operations of said plurality of photoelectric converter elements and said plurality of channel selector switches.

18. (Original) The image reading device according to claim 12, wherein said resolution setting portion is operated to set said image resolution value before each page of image is read by operation of said plurality of photoelectric converter elements and said plurality of channel selector switches.

19. (Previously Presented) The image reading device according to claim 12, wherein said shift register circuit simultaneously turns on a plurality of adjacent switches of said plurality of channel selector switches, when said image resolution value set by said resolution setting portion is other than a highest one of a plurality of image resolution values available by an operation of said resolution setting portion, the number of said adjacent switches varying depending upon the image resolution value set by said resolution setting portion.

20. (Previously Presented) The image reading device according to claim 19, wherein said shift register circuit turns on successive groups of the channel selector switches, each group consisting of said plurality of adjacent switches, in synchronization with respective successive pulses of said clock pulse signal, when the image resolution value set by said resolution setting portion is other than the highest value.

21. (Currently Amended) The image reading device according to claim 20, further comprising a feeding device that moves a row of said photoelectric converter elements and an original carrying an image, relative to each other in a direction perpendicular to a direction of extension of said row, at a speed which increases with an increase in the number of said plurality of adjacent ~~switches~~switches that are simultaneously turned on.

22. (Canceled)

23. (Original) The image sensor according to claim 12, wherein the number of said plurality of on-off control patterns of said plurality of channel selector switches is equal

to a multiple of four, and said plurality of on-off control patterns correspond to respective different values of the image resolution of the image sensor.

24. (Currently Amended) The image reading device according to claim 12, wherein said resolution-setting-timing-signal generating portion changes a moment of rising or falling of said resolution setting timing signal, depending upon said image resolution value to be set by said resolution setting portion, while said first and second resolution-setting-signal generating ~~portion~~portions ~~generates~~generate said first and second resolution setting signals such that a pulse of each of said first and second resolution setting signals rises and falls at respective predetermined fixed first and second moments relative to said moment of rising or falling of said resolution setting timing signal.

25. (Currently Amended) The image reading device according to claim 12, wherein said first and second ~~resolution-setting-timing-signal~~resolution-setting-signal generating portions change a moment of at least one of rising and falling of each of said first and second resolution setting signals, depending upon said image resolution value to be set by said resolution setting portion, while said resolution-setting-timing-signal generating portion generates said resolution setting timing signal such that a pulse of said resolution setting timing signal rises and falls at respective predetermined fixed moments.

26. (Previously Presented) The image reading device according to claim 25, wherein said first and second resolution-setting-signal generating portions change the moment of falling of each of said first and second resolution setting signals relative to the moment of falling of said resolution setting timing signal.

27. (Previously Presented) The image reading device according to claim 25, wherein said first and second resolution-setting-signal generating portions change the moments of rising and falling of each of said first and second resolution setting signals relative to the moments of rising and falling of said resolution setting timing signal.

28. (Previously Presented) The image reading device according to claim 25, wherein said first and second resolution-setting-signal generating portions change the moments of rising and falling of each of said first and second resolution setting signals relative to moments of falling of two successive pulses of said resolution setting timing signal.

29. (Currently Amended) An image reading device comprising:

- a plurality of photoelectric converter elements each of which converts an optical signal into an electric signal;
- a signal generating portion that generates a start signal and a clock pulse signal;
- a plurality of channel selector switches which correspond to said photoelectric converter elements and which are selectively turned on and off to selectively connect and disconnect output portions of the corresponding photoelectric converter elements to and from a common signal line, in synchronization with said clock pulse signal;
- a shift register circuit that selectively turns on and off said plurality of channel selector switches, said shift register circuit being started by said start signal; and
- a resolution setting portion that receives said start signal and said clock pulse signal, and ~~to select~~ selects one of a plurality of on-off control patterns of said plurality of channel selector switches, ~~on the basis of~~ based on a combination of on-off states of said start signal and on-off states of said clock pulse signal, said plurality of channel selector switches being selectively turned on and off in the selected on-off control pattern, to set an image resolution value of the image sensor,

said resolution setting portion including one of (a) a first portion for changing a moment ~~at which the on-off states of said start signal and said clock pulse signal are detected to select~~ of selection of one of the plurality of on-off control patterns of the plurality

of channel selector ~~switches~~, switches based on the combination of on-off states of said start signal and the on-off states of said clock pulse signal, and (b) a second portion for changing the on-off states of said start signal and the on-off states of said clock pulse signal at a predetermined moment of ~~detection of the on-off states of the start signal and the clock pulse signal~~, selection of one of the on-off control patterns of the plurality of channel selector switches.

30. (Currently Amended) A method of setting an image resolution of an image sensor comprising a plurality of photoelectric converter elements each of which converts an optical signal into an electric signal, a plurality of channel selector switches which correspond to said photoelectric converter elements and which are selectively turned on and off to selectively connect and disconnect output portions of the corresponding photoelectric converter elements to and from a common signal line, in synchronization with a clock pulse signal, and a shift register circuit that selectively turns on and off said plurality of channel selector switches, said method comprising the steps of:

~~generating~~ receiving a resolution setting timing signal, a first resolution setting signal and a second resolution setting signal, ~~which are received by the image sensor through~~ first, second and third input terminals, respectively, from an external device outside of the image sensor; and

selecting one of a plurality of on-off control patterns of said plurality of channel selector switches, ~~on the basis of~~ based on a combination of on-off states of the first resolution setting signal and on-off states of the second resolution setting ~~signals~~ signal upon at least one of rising and falling of said resolution setting timing signal, said plurality of channel selector switches being selectively turned on and off in the selected on-off control pattern, to set an image resolution value of the image sensor,

wherein said second resolution setting signal is said clock pulse signal, and
said resolution setting timing signal and said first ~~and second~~ resolution setting signals
are selected from a group consisting of a control signal for setting said image resolution
~~value, value and~~ a start signal for starting said shift register circuit, ~~and said clock pulse~~
~~signal circuit.~~

31. (Canceled)

32. (Previously Presented) The method according to claim 30, wherein the number
of said plurality of on-off control patterns of said plurality of channel selector switches is
equal to a multiple of four, and said plurality of on-off control patterns correspond to
respective different values of the image resolution of the image sensor.

33. (Previously Presented) An image sensor according to claim 9, wherein said
resolution setting portion includes one of (a) a first portion for changing a predetermined
moment at which the on-off states of the first and second resolution setting signals are
detected to select one of the plurality of on-off control patterns of the plurality of channel
selector switches, and (b) a second portion for changing the on-off states of the first and
second resolution setting signals at a moment of detection of the on-off states of the first and
second resolution setting signals.